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Barriers in Nursing Care and its Implications to Patients with Diabetes during COVID-19 Pandemic: An Integrative Review

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Abstract

Introduction: The Corona virus disease that spread across the globe had caused drastic effects to the human race in terms of health and the manner of living for the past two years. It was first sighted in the year of 2019 in the month of December 31st at the town of Wuhan city within the vicinity of Hubei Province in China.

Methods: This study will utilize an integrative literature review. This type of research is a unique form of research that provides new knowledge about the topic through the process of reviewing, critiquing and synthesizing literature to generate new conceptual frameworks. It has been stated that this research approach is designed to complement other knowledge synthesis platforms such as narrative or systematic reviews and meta analyses.

Results: All included studies varied from randomized control trial, retrospective cohort studies, evidence from other systematic reviews, single descriptive or qualitative study and articles from experts and other healthcare professionals.

Discussion: This study describes the nature of nurse patient with diabetes interactions, identifying the barriers in nursing care and management and recognizing its implications to patients with diabetes during the pandemic, in which nurse's experiences on caring with patients with diabetes will be incorporated in this study to recognize, understand and providing reference for future studies.

Conclusion: The purpose of the research review was to gather enough studies of hindrances in nursing care of Diabetic patients with COVID-19 pandemic for the past two years. These identified barriers were clear from the research that has been reviewed and is currently affecting the way healthcare should be delivered to patients.

Keywords: COVID-19; Diabetes; Qualitative study; Cohort study; Synthesizing literature

Introduction

The Corona virus disease that spread across the globe had caused drastic effects to the human race in terms of health and the manner of living for the past two years. It was first sighted in the year of 2019 in the month of December 31st at the town of Wuhan city within the vicinity of Hubei Province in China [1]. The disease had traveled at once in the neighboring countries, causing alarm and declaring it an outbreak and a health emergency globally [2]. Later that year on March 11th, it was made official that the disease is a global pandemic with its transmission that has affected all over the world.

The disease is an illness that is specifically caused by Severe Acute Respiratory Syndrome Corona Virus 2, otherwise known as SARS-CoV-2 [3]. The acronym of COVID-19 from the "Corona virus disease 2019" was named to keep away negative skepticism of the virus original existence. The manifestation of the seriousness of the disease was observed among those with comorbidities such as heart disease, lung disease, diabetes and cancer. On the other hand, diabetes as a high level of sugar in the blood has complications that are not experienced from disease alone. With the prevalence of the novel coronavirus, studies have shown the resulting severity of the condition of an individual with comorbid diabetes and COVID-19. According to a study, the underlying condition of diabetes as well as hypertension and heart disease increases the risk of severe prognosis and mortality to individuals infected with COVID-19 [4]. On the other hand, those with diabetes have a higher chance to be infected with COVID-19 with the same condition applied to obesity, hypertension and heart disease [5]. The said risks have been speculated due to resistance to insulin, increased coagulation of the blood, defense mechanisms of inflammation and the existing obesity.

At the occurrence of COVID-19 pandemic, findings indicating the extent of affecting care management for diabetes has been reported. A study mentioned that during the course of COVID-19 crisis, 45% of young adults (18-24 years old) reported receiving delayed care last June 2020 while 81% with ages (18-29 years old) in the year 2021 between February-March in the United States [6]. It was added that the care for Diabetes must be

routinely managed to prevent adverse health outcomes and get severe status of COVID-19. Even so, cases of uncontrolled elevated glycemia and presence of severe ketoacidosis were among the effects of disrupted management of diabetes during the pandemic. Anyhow, the reported prevalence of diabetes in the Philippines by the international diabetes association last 2020 was 6.3% among adults with 3,993,300 diabetic cases among the 63,265,700 adult population. Diabetes is still considered one of the diseases that cause major threats to the health among Filipinos. These patients are included among the vulnerable in the total number of population in the Philippines during the midst of pandemic [7].

The health care system has experienced a big impact from the effects of the COVID-19 pandemic [8]. They have added that the practices and standards in the field of medicine in terms of the provision of diabetes management as well as care interventions have been changing amidst COVID-19 due to its impact. On the other hand, it has been viewed that identifying factors that hinder health care in the management of Diabetes must be given attention in order to improve outcomes among diabetic patients [9]. This involves the self-management of the disease and improving the control of body metabolism.

This research aims to synthesize the experiences of nurses and identify the barriers in nursing care and management, and to determine the possible implications of these barriers to patients with diabetes during COVID-19 pandemic.

Picot question

The question of this review was: Despite the nurses (P) efforts to provide holistic care (I), what are the identified barriers in nursing care and management (C) and its implication to patients with diabetes (O) during COVID-19 pandemic (T)?

Literature Review

Methods

Research design: This study will utilize an integrative literature review. This type of research is a unique form of research that provides new knowledge about the topic through the process of reviewing, critiquing and synthesizing literature to generate new conceptual frameworks [10]. It has been stated that this research approach is designed to complement other knowledge synthesis platforms such as narrative or systematic reviews and meta analyses [11].

Quality assessment

The content of the studies included in this study was assessed for its quality using the Critical Appraisal Skills Program (CASP) criteria for each resource with their respective level of evidence. Out of eight criteria under CASP, the researchers used the appraisal checklist for randomized control trial for level II, cohort studies for level IV, systematic review for level V and qualitative studies for levels VI and VII resources. These checklists helped the researchers identify the validity and the significance of the literatures in the local setting [12]. All thirty six studies were analyzed and sixty four (64) percent were of high quality and eight (8) percent were of moderate qualities which were included in the research. The remaining twenty eight (28) percent were of low quality and were excluded from the research. Tables 1 to 4 (Appendices) shows the result of quality assessment using the CASP checklists.

Search strategy

The researchers utilized online search engines such as Google Scholar, Worldwide Science, Science Direct and Research Gate to collect different sources of information. These online search engines are free to use and have the most reliable published studies. The literature online search was conducted using the keywords: Barriers in nursing during COVID-19; diabetes mellitus and COVID-19; challenges in nursing during COVID-19 [13]. All researched studies were compiled in a single document and double checked for any redundant entries. Those studies that don't have an access to its full text were rejected. Figure 1 elaborates the identification, screening, eligibility and inclusion criteria of the sources found.

Criteria of eligibility

All studies were manually inspected starting from its abstract up to the entirety of its full text and the researchers selected those who had sufficient and significant findings in relation to the barriers in nursing care and its implication to patients with diabetes during COVID-19. Since the entire timeframe of the topic encompasses during the COVID-19 pandemic, the search ranges from early 2020 until 2022 [14]. Those studies that have a different context from the topic or were published in a different language were excluded (Figure 1).

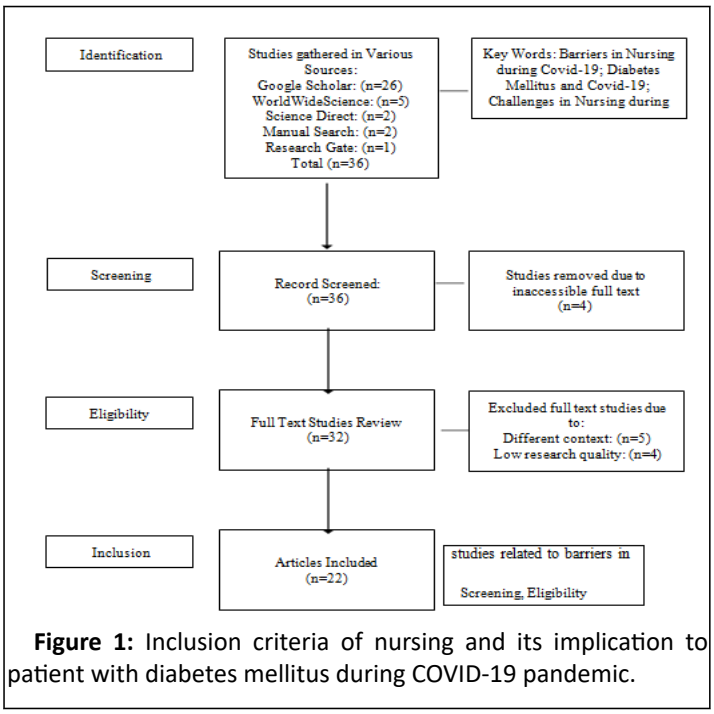

Figure 1: Inclusion criteria of nursing and its implication to patient with diabetes mellitus during COVID-19 pandemic.

Results

Tables 5 and 6 (Appendices) summarizes the synthesized sources and with its research design and contents. There were a total of ten (10) studies pertaining to the barriers in nursing care and a total of twelve (12) studies that show the implication of these barriers to patients with estimated at 4 million worldwide and is expected to rise as the population increases in the coming years. Expanding health care services are crucial in order to provide accessibility to disadvantaged communities which further need trained nurses [15].

In every country, nurses mostly occupy the clinical health workforce, improving and toughen human resources for health, acknowledging that nursing services have a vital role in providing health service delivery [16]. Attaining the objective of health care for all will be in need of great efforts to lessen the shortage of nurses worldwide [17]. Diabetes during COVID-19 pandemic. All included studies varied from randomized control trial, retrospective cohort studies, evidence from other systematic reviews, single descriptive or qualitative study and articles from experts and other healthcare professionals.

Discussion

Nursing care in general

To develop this study, we sought to build on the relevant literature that provided valuable information towards the mutually established goals of the study, examine and reach an agreement on ways to attain them [18]. Mutual aims are focused on the identification of problems, objectives, methods, results, discussions, limitations, conclusions, recommendations where in exchanging of data and knowledge is essential in order to achieve the objectives. This study describes the nature of nurse-patient with diabetes interactions, Identifying the barriers in nursing care and management and recognizing its implications to patients with diabetes during the pandemic, in which nurses experiences on caring with patients with diabetes will be incorporated in this study to recognize, understand and providing reference for future studies. Nursing renders independent and coordinated care of persons in all situations [19]. This involves health promotion, disease prevention, caring for the ill, disabled and dying people. Nurses take a vital role in health care. They frequently detect the health situation of their patients early and function as the implementer of primary healthcare. A competent level of nursing care describes the standards of operation as the nursing process. These include assessment, diagnosis, outcomes identification, planning, implementation and evaluation. Thus, the nursing process includes holistic care by registered nurses and provides the foundation of the nurse's decision making. RNs implement critical health care for all, wherever it is needed. Basic roles include performance assessment before making critical decisions and implementations, health promotion, counseling and health education, administering drugs and coordinating care, in collaboration with healthcare professionals [20]. In most countries, half of all health workers are nurses and play an important role in organizing and applying health interventions. Nurses are usually the first healthcare worker that the patient encounters and their initial data, assessment and care are vital in order to have good outcomes. In spite of the essential role that nurses do in health care, nurses occupy 50% of the health workers in the hospitals. Despite that, Nurses account for 50% shortage globally barriers to nursing care to patients with diabetes during COVID-19 pandemic [21].

Limited information: One of the seen hindrances in providing care to patients with diabetes during the COVID-19 pandemic is lack of knowledge and information among patients with diabetes. Since face to face consultation with a medical practitioner was not practiced during the pandemic, patients with comorbidities had lost the responsibility to monitor one self. An individual who did not experience any untoward symptoms who is diabetic may believe one's body is healthy and would not seek treatment, especially the times when telehealth was already available [22]. In addition, without initiatives among diabetic patients seeking care for health teaching and consultation, nurses and other health professionals may not be able to reach out and provide help [23]. When viewed during the pre COVID times, among the noted inhibitions in providing care in the area of diabetes are the need for comprehensive training and adequate learnings in delivering proper diabetes care [24]. If these short comings have been resolved, new roles can be formed in areas of health teaching, assistance in psychological perspective and care enhancement that would lead to a quality standard care for diabetes patients and to healthy individuals.

Challenging practices: Lockdown was imposed in every part of the globe when the COVID-19 was discovered and declared as a pandemic of an unknown virus. All families were forced to stay within their homes. One family member is allowed to go out to avail basic and essential needs for survival. This strict order of governments in every country is a way in order to avoid transmission of the virus to the people and may be able to contain it. Physical consultations were affected with this implementation [25]. The benefits of rendering face to face seeking care such as thorough history interviews and physical assessment had somehow ceased.

COVID-19 as a novel virus little was known on the nature of its survival. Since it is a virus and mutations were expected, the characteristic of new variants formed was not predicted and has to be studied. Surge incidence happened due to the uncertainty on how transmissible the new variants were. The spike in the number of infected individuals with COVID-19 has overwhelmed almost all health institutions. The COVID-19 positive patients were given priority and were the only ones being accepted for admissions in the hospital [26]. The care for the non COVID a patient is greatly affected in terms of their health outcomes due to their limited acceptance for consultation and admission. It has been explained in regards to limited facilities and preserved funds for accommodating non COVID patients due to invested expenses by the government only allocated for the treatment of COVID-19 cases [27]. In addition to great concern to the general population, the other aspect of being undiagnosed at all [28]. People may not be aware that they are already carrying an illness within themselves like diabetes. Due to lockdown

implementation, this aspect of being unable to diagnose potential individuals for being sick is one of the halted areas of care among health professionals. One example is of an outpatient services such as wound care were on limited operation [29]. Chronic and non healing wounds that need special care and follow up were affected. If these uncertainties brought about by COVID-19 pandemic continue, chronic wound care assistance as well with diabetic patients will be affected causing a major challenge to wound care nurses.

Literature that pertains to limited available access to care has found that quality patient care decreased in comparison during the time of pre pandemic. The factors that have been affected by the Covid-19 pandemic aside from poor glycemic control, a study have indicated outcomes of the crisis as the following: foot and retinopathy/neuropathy screening; blood pressure monitoring; levels of albumin, creatinine, lipid profile, thyroid hormones, and glycosylated hemoglobin; high quality standard practices and prevalence of type 2 diabetes mellitus [30]. These indicators were observed to have been decreased to both types of diabetes during the COVID-19 pandemic.

The increase of COVID-19 cases has affected the shortage of staff commonly among nurses in delivering care to COVID-19 patients. The number of patients is not comparable to the number of available nurses employed in certain hospitals. Quality nursing care cannot be met in this situation. Aside from employed staff, there were also shortages of medicines as part of treatment of COVID. Due to this limited number of drugs available, this caused the change into an expensive rate.

One of the literatures found that may affect giving nursing care to diabetic patients stated about the available time to do diabetic management to patients. These diabetic patients excused themselves by giving time for work without allotting the remaining free period for learning about managing diabetes. This may cause one of the factors in limiting the knowledge on how to do self care practices in handling diabetes conditions. Also, with limited nurses assigned in monitoring diabetic patients, house to house visits were inadequate. This disrupts the routine care for monitoring the progress of managing this disease.

Another challenge faced by health practitioners is the unknown approach in treating diabetic patients after recovering from COVID-19 disease. The question remains if the treatment of low glucose therapy should be practiced back after the COVID infection or what diabetic management is appropriate in this new situation of recovering from a new discovered pandemic disease. Such a dilemma can somehow delay the proper care to be given in these diabetic patients until further studies may otherwise find solutions for a better strategy.

Concern about own health: The novel COVID-19 disease is an unknown virus that has frightened many people. It has created fear for the risk of exposure to the disease that mostly others do not wish to go out even if their health is at stake that needs to be seen by a medical practitioner. This has been explained by that the fact that people with comorbidities are easily infected with COVID-19 in severe cases has contributed much horror among those patients with diabetes. Hospitals and health providers were being avoided due to their direct contact of COVID patients with the possibility of carrying the virus and may transmit it to others. Fear causes diabetic patients to be out of their homes and physically go to health facilities.

On the other hand, nurses taking care of patients with diabetes during COVID-19 pandemic do also carry fear that they might get infected with the virus and become ill. The worst case is to meet death from being infected. Likewise, they worry that once they catch the COVID 19 virus, they can transmit it to their family and aging parents.

Environmental barriers: There are obstacles being faced among physicians and nurses in taking care of diabetic patients infected with COVID-19 within the hospital. Health providers need to protect themselves before providing direct care to COVID patients. Personal Protective Equipment (PPE) is an important defense that needs to be worn by all health professionals in the COVID unit. One cannot be near a patient without wearing this protection. If resources of PPE are scarce, giving care to diabetic patients with COVID-19 will be limited. Aside from shortage of PPE, hospital supplies such as alcohol, disinfectant, ventilators and COVID-19 testing kits are also a major concern. Due to the increase in demand caused by the pandemic, PPE's and medical supplies that protect the nurses become an inhibition on the delivery of efficient care towards diabetic patients during COVID-19.

Intravenous glucose monitoring was invented to limit direct care to COVID-19 patients. Nurses need proper training on using such devices that would benefit both parties. The other obstacle that creates restraints to care among patients which is an external source is the difficulty in getting transportation. This is common among nurses on their way to the hospital for their scheduled duties.

Implications of barrier in nursing care to patients with diabetes

It is evident that nurses have concerns about diabetes care and this was supported by the fact that people with diabetes complain of poor inpatient services especially in relation to the limited information or knowledge among hospital staff. Primary health workers inadequate knowledge, professional guidance and support about diabetes emergencies, resulted in patients with serious emergencies like DKA and hypoglycemia that required hospital confinement. It is vital that health care providers, including nurses be involved in disseminating appropriate and accurate health information about general preventive measures to facilitate self-care, reduce the complications of diabetes and improve the well-being of patients with diabetes amid the COVID-19 pandemic. Lower socioeconomic status commonly have deficiency in self-care due to inadequate knowledge and low behavioral beliefs about COVID-19 diabetes management and this results in confusion on their hypoglycemic agents that leads to non-compliance to self monitoring of blood glucose which results in poor outcomes of their self management of glycemic control.

When lockdown was implemented as a way to avoid the spread and transmission of virus caused by COVID 19, physical consultations were limited and this further caused acute

diabetes complications. With the increased number of COVID cases, healthcare institutions become saturated, hence transforming medical surgical ward units into COVID wards. In addition, shortage of medicines, medical supplies and high selling value in the pharmaceuticals including insulins, oral hypoglycemic agents, test strips and alcohol and even expert care from healthcare providers has an impact and becomes challenging on the wellness and nursing care of patients with diabetes which is why middle to low income often neglect monitoring their blood sugar and become non compliant with their medications. Due to the increased number of patients handled by lockdown caused by the pandemic, People tend to prioritize work and other sources of income and overlook their self-care practices in control of diabetes. Most of the patients feel sad and worried regarding the COVID-19 situation and these results in dissatisfaction, anxiety and Quality nursing care was affected.

Conclusion

The purpose of the research review was to gather enough studies of hindrances in nursing care of diabetic patients with COVID-19 pandemic for the past two years. These identified barriers were clear from the research that has been reviewed and is currently affecting the way healthcare should be delivered to patients. COVID-19 is a novel virus which has limited to unknown information, this resulted in fear of being infected in both patient's side and healthcare individuals. The situation pushed the healthcare system to modify challenging practices and adapt to environmental settings such as wearing of Personal Protective Equipment (PPE). But as we march forward, more knowledge will be unveiled about the virus and this is significant to nurses in assisting diabetic patients to improve the condition of a quality life and better health outcomes, these efforts are foreseen to eliminate these barriers in the future.

Recommendations

After a thorough appraisal and considering the prior findings and conclusion, three recommendations were introduced. First is reducing the fear of infection, strengthens the safety of the health professionals and makes it a priority especially when handling a highly infectious disease. To efficiently manage the diabetic patients during the pandemic, it would require continuous supply of Personal Protective Equipment (PPE). Making sure there is a high logistics of PPE in advance, to better prepare for any possible surge of cases again. Nurses had a short span of time to attempt to retaliate the issues against self-infection, cross infection to families, physical and emotional burnout. To ascertain a healthy environment means maintaining the morale of nurses elevated. The second recommendation is promoting self-care to diabetes patients. This is very essential for every diabetes patient to have self-care behaviors for them to have good progress. Through self management, they can improve their quality of life and minimize the risk of developing complications which can later reduce hospital admission especially in times of pandemic. Lastly, reinforcing health teachings in handling diabetes patients with COVID-19 infection. As health care professionals, health teaching in all kinds of diseases is a must. Diabetic patients must be aware and well informed on his/her disease, same as his family members, how diabetes acquired or its origin, how to manage such disease, prevent further complications, do's and don'ts for healthier lifestyle in the midst of pandemic. Thus this gives knowledge to the patient and knows what to do while lock down occurs.

Implications to Nursing Practice

COVID-19 becomes a great challenge for healthcare professionals and patients with diabetes. Most of the patients feel sad and worried regarding the COVID-19 situation that result in dissatisfaction and anxiety. Understanding the barriers in nursing care and its implications during pandemic will help healthcare providers in making changes and better manage diabetes. Recognizing these barriers can help in establishing favorable isolation environments, reinforcing medical support, health teaching, and develop patient-centered diabetes care to promote a successful outcome of nursing care during pandemic. Since Nurses own an essential role in diabetes management, it is important to clearly identify the complexity of their roles in diabetes care. Eradicating identified barriers that hinder the provision of quality nursing care, finally, exposing nurses in training specifically related to diabetes care and supporting nurses to achieve positive health outcomes.

Limitations

This research has its limitations, it is an integrative review with thorough incorporation and prohibition of criteria as far as the quality of numerous pieces of evidence in the studies. The researchers gathered information through different research, lectures, studies, and articles regarding the topic and there were relatively few outputs due to the limited time frame available where the discussion only started when the pandemic began in 2020. Consequently, more research may be published with superior and greater reviews.

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